

# Giant Gippsland Earthworm



## Modified Ecological Vegetation Class (EVC) Planting Lists and Density Recommendations for Giant Gippsland Earthworm (GGE) Habitat

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The majority of Giant Gippsland Earthworm (GGE) habitat in the Strzelecki Ranges has been cleared for agriculture. GGE can survive well under pasture but need protection from threats such as changes in the soil moisture, soil compaction and pugging by cattle. Revegetation of dense, high water-usage species can dry out GGE habitat. One of the aims of this project is to protect GGE habitat while demonstrating the planting of indigenous vegetation adjacent to colonies that once grew in the south-western Strzeleckis before European settlement. This is achieved by fencing GGE habitat to protect them from grazing pressures such as compaction and pugging and creating a buffer around the colonies where a modified planting method is used in different buffer zones. This includes lower planting densities and selection of specific lifeforms from the appropriate Ecological Vegetation Class (EVC).

EVC is a classification system used as a basis for plant selection for revegetation projects across Victoria. An EVC consists of one or a number of floristic communities that appear to be associated with a recognisable environmental niche. Each EVC is described by a combination of its structure, floristics, life-form and reproductive strategy features, and through an inferred fidelity to particular environmental parameters.

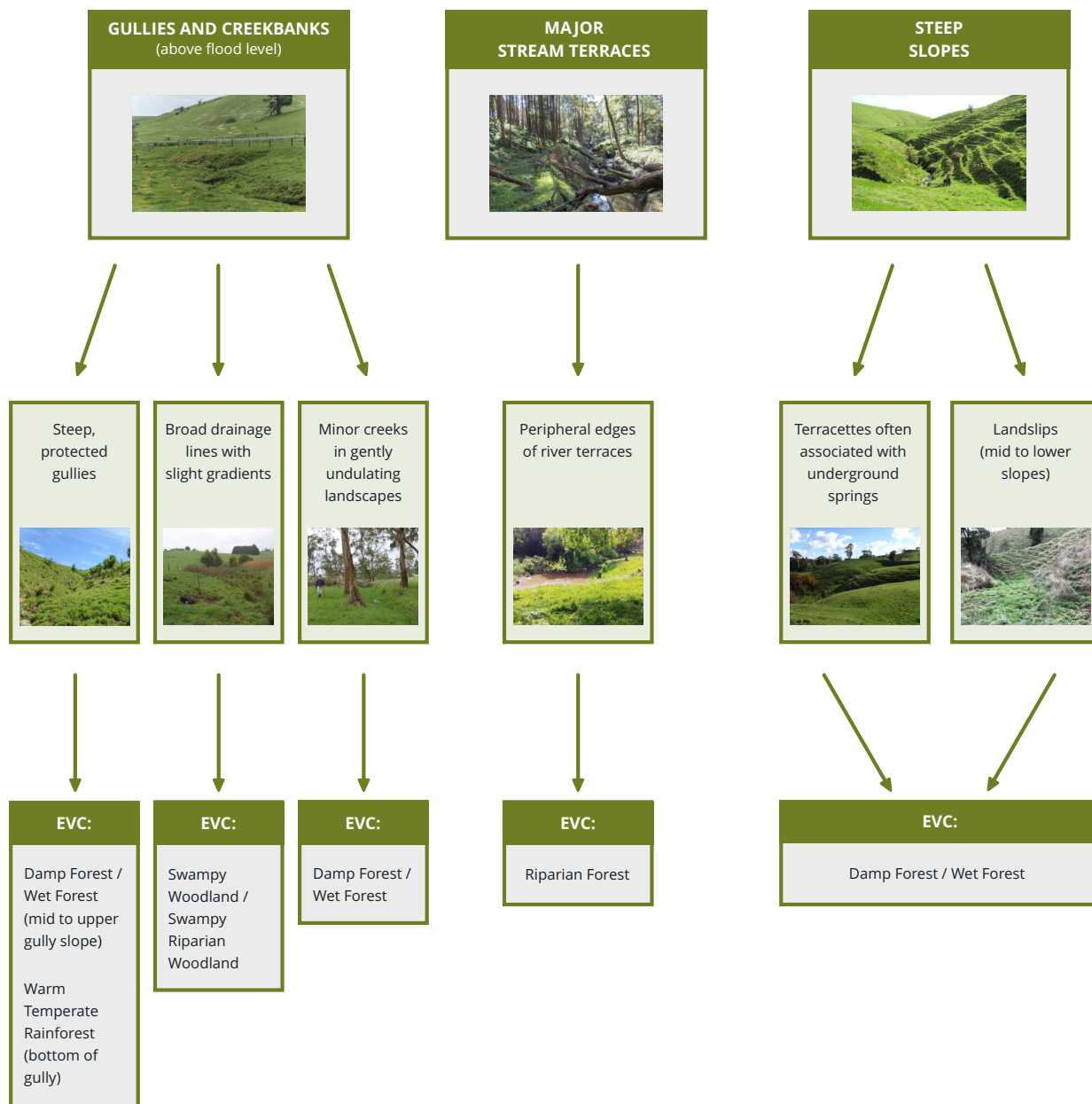
The descriptions below are general descriptions for the EVCs but the species lists have been refined and are specific to the south-western Strzeleckis where the GGE is found. The modified planting design is characterized by the creation of three zones, each of which requires different planting regimes chosen from the appropriate EVC (species composition and density). Broadly, the three most commonly found EVCs in GGE habitat (pre-European settlement) are Wet/Damp Forest, Swampy Riparian Woodland and Warm Temperate Rainforest. To simplify the modified planting guidelines in Giant Gippsland Earthworm habitat, the EVC revegetation species lists and planting densities have been combined for some of the landforms.

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## Modified Ecological Vegetation Class (EVC) Planting Lists and Density Recommendations for Giant Gippsland Earthworm (GGE) Habitat

What Habitat Is Your GGE Colony Located In?



### Glossary:

**Bioregion:** A landscape-scale approach to classifying the environment using a range of attributes such as climate, geomorphology, geology, soils and vegetation. There are 28 bioregions identified within Victoria and the Giant Gippsland Earthworm habitat is within the Strzelecki Ranges bioregion.

**Ecological Vegetation Class (EVC):** The standard unit for classifying vegetation types in Victoria. EVCs are described through a combination of floristics, lifeforms and ecological characteristics, and through an inferred fidelity to particular environmental attributes. Each EVC includes a collection of floristic communities (i.e. lower level in the classification) that occur across a biogeographic range, and although differing in species, have similar habitat and ecological processes operating.

For further information on bioregions and EVCs, please refer to the link below to the Department of Energy, Environment and Climate Action (DEECA)'s website: <https://www.environment.vic.gov.au/biodiversity/bioregions-and-evc-benchmarks>

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### Damp Forest / Wet Forest

Damp Forest grows mainly on southerly and easterly aspects, and often on steep slopes and long, shallow gullies within Giant Gippsland Earthworm habitat of the south-western Strzelecki Ranges. It is dominated by a tall eucalypt layer over a layer of broad-leaved shrubs shared with Wet Forest and mixed with shrubs representative of drier forest types such as Lowland Forest.

Wet Forest is only a minor occurrence in GGE habitat and is mainly in higher elevation and higher rainfall areas of the Strzelecki Ranges such as Mount Worth and Tarra Bulga National Park. Some of the broad-leaved species of Wet Forest associated with more protected gullies that are also found in Damp Forest have been included in the Damp Forest revegetation species list.

The canopy can include a number of Eucalypt species such as Mountain Ash (*Eucalypt regnans*), Strzelecki Gum (*Eucalyptus strzeleckii*), Manna Gum (*Eucalyptus viminalis*), Blue Gum (*Eucalyptus globulus*), and Mountain Grey-gum (*Eucalyptus cypellocarpa*) with tall understorey trees such as Blackwood (*Acacia melanoxylon*) and Silver Wattle (*Acacia dealbata*).

The understorey consists of a combination of broad-leaved shrubs such as Blanket Leaf (*Bedfordia arborescens*), Hazel Pomaderris (*Pomaderris aspera*), Musk Daisy-bush (*Olearia argophylla*), together with narrow-leaved shrubs including Common Cassinia (*Cassinia aculeata*) and Prickly Moses (*Acacia verticillata*).



**Remnant Damp Forest site, Trida**



**Various stages of Damp Forest revegetation, Bena**

The ground layer includes forbs and grasses as well as moisture-dependent ferns such as Common Ground-fern (*Calochlaena dubia*), Tender Brake (*Pteris tremula*) and Mother Shield-fern (*Polystichum proliferum*). Tree-ferns including Rough Tree-fern (*Cyathea australis*) and Soft Tree-fern (*Dicksonia antarctica*) are also often present. However, GGE habitat is not normally found in areas dominated by ferns.

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### Revegetation Species List for EVCs: Damp Forest / Wet Forest

SCIENTIFIC NAME	COMMON NAME	NOTES
<b>Overstorey Trees</b>		
<i>Eucalyptus cypellocarpa</i>	Mountain Grey-gum	
<i>Eucalyptus globulus</i>	Blue Gum	
<i>Eucalyptus regnans</i>	Mountain Ash	
<i>Eucalyptus strzeleckii</i>	Strzelecki Gum	
<i>Eucalyptus viminalis</i>	Manna Gum	
<b>Understorey trees / large shrubs</b>		
<i>Acacia dealbata</i>	Silver Wattle	
<i>Acacia melanoxylon</i>	Blackwood	
<i>Bedfordia arborescens</i>	Blanket Leaf	
<i>Correa lawrenceana</i>	Mountain Correa	
<i>Lomatia fraseri</i>	Tree Lomatia	
<i>Myrsine howittiana</i>	Mutton-wood	
<i>Olearia argophylla</i>	Musk Daisy-bush	
<i>Pittosporum bicolor</i>	Banyalla	
<i>Pomaderris aspera</i>	Hazel Pomaderris	
<i>Zieria arborescens</i>	Stinkwood	
<b>Medium / small shrubs</b>		
<i>Acacia verticillata</i>	Prickly Moses	
<i>Cassinia aculeata</i>	Common Cassinia	
<i>Cassinia trinerva</i>	Three-nerved Cassinia	
<i>Coprosma quadrifida</i>	Prickly Currant-bush	
<i>Goodenia ovata</i>	Hop Goodenia	
<i>Olearia lirata</i>	Snowy Daisy-bush	
<i>Ozothamnus ferrugineus</i>	Tree Everlasting	
<i>Pimelea axiflora</i>	Bootlace Bush	
<i>Polyscias sambucifolia</i>	Elderberry Panax	
<i>Prostanthera lasianthos</i>	Victorian Christmas-bush	
<i>Solanum aviculare</i>	Kangaroo Apple	
<i>Tasmannia lanceolata</i>	Mountain Pepper	
<i>Sambucus gaudichaudiana</i>	White Elderberry	

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### Revegetation Species List for EVCs: Damp Forest / Wet Forest

SCIENTIFIC NAME	COMMON NAME	NOTES
<b>Graminoids</b>		
<i>Carex appressa</i>	Tall Sedge	wetter areas
<i>Juncus gregiflorus</i>	Green Rush	wetter areas
<i>Juncus pauciflorus</i>	Loose-flower Rush	wetter areas
<i>Juncus procerus</i>	Tall Rush	wetter areas
<i>Dianella tasmanica</i>	Tasman Flax-lily	
<i>Poa labillardierei</i>	Common Tussock-grass	
<i>Poa tenera</i>	Slender Tussock-grass	
<b>Herbs</b>		
		<b>optional</b>
<i>Acaena novae-zelandiae</i>	Bidgee-widgee	
<i>Geranium potentilloides</i>	Soft Crane's-bill	
<i>Hackelia latifolia</i>	Forest Hound's-tongue	
<i>Hydrocote hirta</i>	Hairy Pennywort	
<i>Stellaria flaccida</i>	Forest Starwort	

# Giant Gippsland Earthworm



## Modified Ecological Vegetation Class (EVC) Planting Lists and Density Recommendations for Giant Gippsland Earthworm (GGE) Habitat

### Recommended Modified Planting Densities within GGE Habitat for EVCs: Damp Forest / Wet Forest

ZONES	LIFEFORM	MODIFIED GGE EVC BENCHMARK - PLANTS / HA	APPROXIMATE SPACING (m)	NOTES
<b>Zone 1</b>				
1	Trees	0	n/a	<b>No planting</b>
1	Understorey trees / shrubs	0	n/a	<b>No planting</b>
1	Medium shrubs / small shrubs	0	n/a	<b>No planting</b>
1	Graminoids	1000	3	<p>On occasion, you may choose to do limited planting in Zone 1 for the following reasons:</p> <ul style="list-style-type: none"> <li>- To prevent soil erosion</li> <li>- If you are worried about weed issues in the future or the need to maintain the site</li> <li>- If the colonies are close together (less than 30 m apart)</li> </ul> <p>If planting in Zone 1, only plant from the graminoid lifeform found (tussock grasses/sedges/rushes).</p>
<b>Zone 2</b>				
2	Trees	0	n/a	<b>No planting</b>
2	Understorey trees / large shrubs	40	15	In Zone 2, on steep slopes, only plant <i>Acacia dealbata</i> and <i>Acacia melanoxylon</i> on the outer edges of the slope. Also, no planting of these species at the top of a soak in this zone.
2	Medium shrubs / small shrubs	600	4	Plant taller, medium-sized shrubs such as <i>Correa lawrenceana</i> , <i>Cassinia trinerva</i> , <i>Acacia verticillata</i> and <i>Prostanthera lasianthos</i> towards outer edge of Zone 2.
2	Graminoids	800	3.5	
<b>Zone 3</b>				
<b>No modified planting</b>				
3	Trees	200	7	
3	Understorey trees / large shrubs	150	8	
3	Medium shrubs / small shrubs	1000	3	
3	Graminoids	400	5	

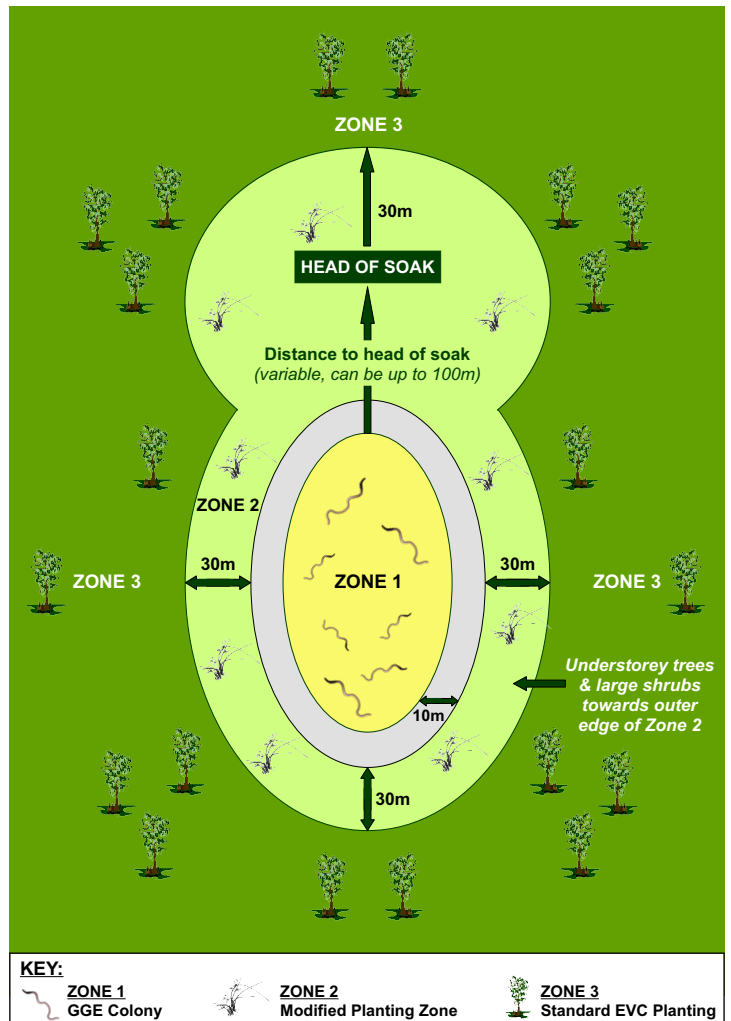
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## Modified Ecological Vegetation Class (EVC) Planting Lists and Density Recommendations for Giant Gippsland Earthworm (GGE) Habitat

### Recommended Modified Planting Densities within GGE Habitat for EVCs: Damp Forest / Wet Forest

- Zone 1: GGE Habitat plus 10 m buffer
- Zone 2: From Zone 1 boundary out 30 m
- Zone 3: From Zone 2 boundary to outer edge of revegetation site



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## Modified Ecological Vegetation Class (EVC) Planting Lists and Density Recommendations for Giant Gippsland Earthworm (GGE) Habitat

### Recommended Modified Planting Densities within GGE Habitat for EVCs: Damp Forest / Wet Forest

ZONES	LIFEFORM	MODIFIED GGE EVC BENCHMARK - PLANTS / HA	APPROXIMATE SPACING (m)	NOTES
<b>Zone 1</b>				
1	Trees	0	n/a	<b>No planting</b>
1	Understorey trees / shrubs	0	n/a	<b>No planting</b>
1	Medium shrubs / small shrubs	0	n/a	<b>No planting</b>
1	Graminoids	1000	3	<p>On occasion, you may choose to do limited planting in Zone 1 for the following reasons:</p> <ul style="list-style-type: none"> <li>- To prevent soil erosion</li> <li>- If you are worried about weed issues in the future or the need to maintain the site</li> <li>- If the colonies are close together (less than 30 m apart)</li> </ul> <p>If planting in Zone 1, only plant from the graminoid lifeform found (tussock grasses/sedges/rushes).</p>
<b>Zone 2</b>				
2	Trees	0	n/a	<b>No planting</b>
2	Understorey trees / large shrubs	40	15	In Zone 2, on steep slopes, only plant <i>Acacia dealbata</i> and <i>Acacia melanoxylon</i> on the outer edges of the slope. Also, no planting of these species at the top of a soak in this zone.
2	Medium shrubs / small shrubs	600	4	Plant taller, medium-sized shrubs such as <i>Correa lawrenceana</i> , <i>Cassinia trinerva</i> , <i>Acacia verticillata</i> and <i>Prostanthera lasianthos</i> towards outer edge of Zone 2.
2	Graminoids	800	3.5	
<b>Zone 3</b>				
3	Trees	200	7	
3	Understorey trees / large shrubs	150	8	
3	Medium shrubs / small shrubs	1000	3	
3	Graminoids	400	5	



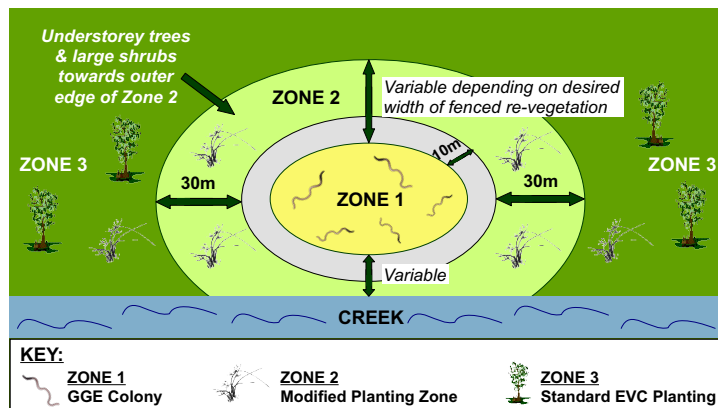
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### Recommended Modified Planting Densities within GGE Habitat for EVCs: Damp Forest / Wet Forest

- Zone 1: GGE Habitat plus 10 m buffer
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- Zone 3: From Zone 2 boundary to outer edge of revegetation site



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## Modified Ecological Vegetation Class (EVC) Planting Lists and Density Recommendations for Giant Gippsland Earthworm (GGE) Habitat

### Warm Temperate Rainforest

Strzeleckis Warm Temperate Rainforest occurs in steep, protected, gullies and is entirely restricted to the lowland valleys of the Strzelecki Ranges in South Gippsland. It is closely associated with Damp Forest (upslope) within GGE habitat in the south-western Strzeleckis. This rainforest community would have been much more widespread in this area prior to agricultural clearing and today only a few scattered indigenous species remain in the mostly cleared gullies. Eucalypt species would have been incidental and mainly overhanging the gullies.

The canopy is mainly dominated by Blackwood (*Acacia melanoxylon*), Sweet Pittosporum (*Pittosporum undulatum*), Mutton-wood (*Myrsine howittiana*) and Djelwuck (*Hedycarya angustifolia*). (It is not recommended that Sweet Pittosporum be planted as it tends to grow outside the range of its original habitat, mainly due to seed dispersal by birds). In more intact examples, the canopy can be covered with vines such as Twining Silkpod (*Parsonsia brownii*) and Forest Clematis (*Clematis glycinoides*).

Scattered shrubs present in the understorey include Dusty Daisy-bush (*Olearia phlogopappa*), Prickly Currant-bush (*Coprosma quadrifida*), White Elderberry (*Sambucus gaudichaudiana*), and Kangaroo Apple (*Solanum aviculare*). Where light is able to penetrate, a number of herbs such as Hairy Pennywort (*Hydrocotyle hirta*), Kidneyweed (*Dichondra repens*) and Scrub Nettle (*Urtica incisa*) are found in the ground layer. Ferns can dominate the ground layer and include species such as Sickie Fern (*Pellaea falcata*), Tender Brake (*Pteris tremula*) and Mother Shield-fern (*Polystichum proliferum*).

There are no intact remnants with the majority of gullies having been cleared for agriculture with only an occasional weed infested remnant to be seen today such as at Ness Creek Reservoir, Korumburra; and Bass Gorge, Glen Forbes.



**Strzeleckis Warm Temperate Rainforest dominated by Muttonwood, Cape Liptrap area**

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### Revegetation Species List for EVCs: Damp Forest / Wet Forest / Warm Temperate Rainforest

SCIENTIFIC NAME	COMMON NAME	NOTES
<b>Overstorey Trees</b>		
<i>Eucalyptus cypellocarpa</i>	Mountain Grey-gum	No eucalypt planting in the bottom of the gully - plant understorey trees / shrubs instead from the list below.
<i>Eucalyptus globulus</i>	Blue Gum	
<i>Eucalyptus regnans</i>	Mountain Ash	
<i>Eucalyptus strzeleckii</i>	Strzelecki Gum	
<i>Eucalyptus viminalis</i>	Manna Gum	
<b>Understorey trees / large shrubs</b>		
<i>Acacia dealbata</i>	Silver Wattle	
<i>Acacia melanoxylon</i>	Blackwood	
<i>Bedfordia arborescens</i>	Blanket Leaf	
<i>Correa lawrenceana</i>	Mountain Correa	
<i>Hedycarya angustifolia</i>	Djelwuck	
<i>Lomatia fraseri</i>	Tree Lomatia	
<i>Myrsine howittiana</i>	Mutton-wood	
<i>Olearia argophylla</i>	Musk Daisy-bush	
<i>Pittosporum bicolor</i>	Banyalla	
<i>Pomaderris aspera</i>	Hazel Pomaderris	
<i>Zieria arborescens</i>	Stinkwood	
<b>Medium / small shrubs</b>		
<i>Acacia verticillata</i>	Prickly Moses	
<i>Cassinia aculeata</i>	Common Cassinia	
<i>Cassinia trinerva</i>	Three-nerved Cassinia	
<i>Coprosma quadrifida</i>	Prickly Currant-bush	
<i>Goodenia ovata</i>	Hop Goodenia	
<i>Olearia lirata</i>	Snowy Daisy-bush	
<i>Olearia phlogopappa</i>	Dusty Daisy-bush	
<i>Ozothamnus ferrugineus</i>	Tree Everlasting	
<i>Pimelea axiflora</i>	Bootlace Bush	
<i>Polyscias sambucifolia</i>	Elderberry Panax	
<i>Prostanthera lasianthos</i>	Victorian Christmas-bush	
<i>Sambucus gaudichaudiana</i>	White Elderberry	

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### Revegetation Species List for EVCs: Damp Forest / Wet Forest / Warm Temperate Rainforest

SCIENTIFIC NAME	COMMON NAME	NOTES
<i>Solanum aviculare</i>	Kangaroo Apple	
<i>Tasmannia lanceolata</i>	Mountain Pepper	
<b>Graminoids</b>		
<i>Carex appressa</i>	Tall Sedge	wetter areas
<i>Juncus gregiflorus</i>	Green Rush	wetter areas
<i>Juncus pauciflorus</i>	Loose-flower Rush	wetter areas
<i>Juncus procerus</i>	Tall Rush	wetter areas
<i>Dianella tasmanica</i>	Tasman Flax-lily	
<i>Poa labillardierei</i>	Common Tussock-grass	
<i>Poa tenera</i>	Slender Tussock-grass	
<b>Herbs</b>		<b>optional</b>
<i>Acaena novae-zelandiae</i>	Bidgee-widgee	
<i>Geranium potentilloides</i>	Soft Crane's-bill	
<i>Hackelia latifolia</i>	Forest Hound's-tongue	
<i>Hydrocyle hirta</i>	Hairy Pennywort	
<i>Stellaria flaccida</i>	Forest Starwort	

# Giant Gippsland Earthworm



## Modified Ecological Vegetation Class (EVC) Planting Lists and Density Recommendations for Giant Gippsland Earthworm (GGE) Habitat

### Recommended Modified Planting Densities within GGE Habitat for EVCs: Damp Forest / Wet Forest / Warm Temperate Rainforest

ZONES	LIFEFORM	MODIFIED GGE EVC BENCHMARK - PLANTS / HA	APPROXIMATE SPACING (m)	NOTES
<b>Zone 1</b>				
1	Trees	0	n/a	<b>No planting</b>
1	Understorey trees / shrubs	0	n/a	<b>No planting</b>
1	Medium shrubs / small shrubs	0	n/a	<b>No planting</b>
1	Graminoids	1000	3	<p>On occasion, you may choose to do limited planting in Zone 1 for the following reasons:</p> <ul style="list-style-type: none"> <li>- To prevent soil erosion</li> <li>- If you are worried about weed issues in the future or the need to maintain the site</li> <li>- If the colonies are close together (less than 30 m apart)</li> </ul> <p>If planting in Zone 1, only plant from the graminoid lifeform found (tussock grasses/sedges/rushes).</p>
<b>Zone 2</b>				
2	Trees	0	n/a	<b>No planting</b>
2	Understorey trees / large shrubs	40	15	In Zone 2, on steep slopes, only plant <i>Acacia dealbata</i> and <i>Acacia melanoxylon</i> on the outer edges of the slope. Also, no planting of these species at the top of a soak in this zone.
2	Medium shrubs / small shrubs	600	4	Plant taller, medium-sized shrubs such as <i>Correa lawrenceana</i> , <i>Cassinia trinerva</i> , <i>Acacia verticillata</i> and <i>Prostanthera lasianthos</i> towards outer edge of Zone 2.
2	Graminoids	800	3.5	
<b>Zone 3</b>				
3	Trees	200	7	
3	Understorey trees / large shrubs	150	8	
3	Medium shrubs / small shrubs	1000	3	
3	Graminoids	400	5	

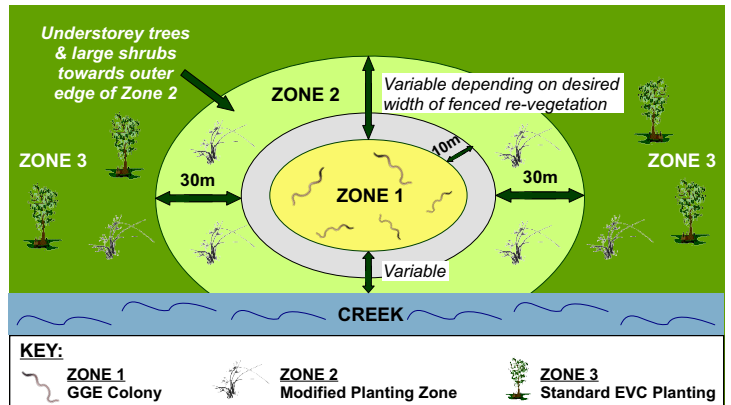
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### Recommended Modified Planting Densities within GGE Habitat for EVCs: Damp Forest / Wet Forest / Warm Temperate Rainforest

- Zone 1: GGE Habitat plus 10 m buffer
- Zone 2: From Zone 1 boundary out 30 m
- Zone 3: From Zone 2 boundary to outer edge of revegetation site



# Giant Gippsland Earthworm



## Modified Ecological Vegetation Class (EVC) Planting Lists and Density Recommendations for Giant Gippsland Earthworm (GGE) Habitat

### Swampy Woodland / Swampy Riparian Woodland

Swampy Woodland occurs on seasonally waterlogged wet flats, extending into valley floors in wet areas to the rear of stream levees. This waterlogging is caused by seepage or surface run-off but in the case of Swampy Riparian Woodland inundation of active floodplains. As the vast majority of these habitats have been drained and cleared for agriculture, the original floristics are often obscured.

Swamp Gum (*Eucalyptus ovata*) is usually the dominant overstorey species. Messmate (*Eucalyptus obliqua*), Narrow-leaved Peppermint (*Eucalyptus radiata*), Manna Gum (*Eucalyptus viminalis subsp. viminalis*) can also be present, particularly on more marginal sites. Swamp Paperbark can occur in stands in the understorey with rushes and sedges often being conspicuous in the ground layer. This EVC is uncommon due to vast areas being drained and cleared for agriculture in the past.

Swampy Woodland can be found in low gradient, shallow gullies immediately north and south of the Warragul/Drouin area and the southern lower slopes of the south-western Strzeleckis adjacent to the coastal plain.



**Intact, higher rainfall version of Swampy Woodland, Shady Creek**



**Degraded Swampy Riparian Woodland, largely cleared and dominated by Willows, Brandy Creek.**

Swampy Riparian Woodland is similar in many characteristics to Swampy Woodland but occurs in the riparian zone of low gradient streams, including levees and wetland systems associated with the verges of channels and ponds. In intact examples it includes a wide range of riparian elements such as reeds, sedges, rushes, tussock grasses and aquatic herbs. For revegetation purposes for the GGE, it has been included within the Swampy Woodland revegetation species list as most GGE habitat is on the very periphery of this EVC.

Most of the Swampy Woodland and Swampy Riparian Woodland EVCs have been cleared for agriculture in the south-western Strzeleckis. An example of a degraded remnant is the lowland flats of the Powlett River (though mostly cleared).

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### Revegetation Species List for EVCs: Swampy Woodland / Swampy Riparian Woodland

SCIENTIFIC NAME	COMMON NAME	NOTES
<b>Overstorey Trees</b>		
<i>Eucalyptus cypellocarpa</i>	Mountain Grey-gum	
<i>Eucalyptus obliqua</i>	Messmate	
<i>Eucalyptus ovata</i>	Swamp Gum	
<i>Eucalyptus strzeleckii</i>	Strzelecki Gum	
<b>Understorey trees / large shrubs</b>		
<i>Acacia dealbata</i>	Silver Wattle	
<i>Acacia melanoxylon</i>	Blackwood	
<i>Melaleuca ericifolia</i>	Swamp Paperbark	
<i>Melaleuca squarrosa</i>	Scented Paperbark	
<i>Pomaderris aspera</i>	Hazel Pomaderris	
<b>Medium / small shrubs</b>		
<i>Acacia verticillata</i>	Prickly Moses	
<i>Coprosma quadrifida</i>	Prickly Currant-bush	
<i>Goodenia ovata</i>	Hop Goodenia	
<i>Leptospermum continentale</i>	Prickly Tea-tree	
<i>Ozothamnus ferrugineus</i>	Swamp Paperbark	
<i>Polyscias sambucifolia</i>	Elderberry Panax	
<i>Prostanthera lasianthos</i>	Victorian Christmas-bush	
<b>Graminoids</b>		
<i>Carex appressa</i>	Tall Sedge	
<i>Carex fascicularis</i>	Tassle Sedge	
<i>Dianella tasmanica</i>	Tasman Flax-lily	
<i>Gahnia sieberiana</i>	Red-fruit Saw-sedge	
<i>Juncus gregiflorus</i>	Green Rush	
<i>Juncus pauciflorus</i>	Loose-flower Rush	
<i>Juncus procerus</i>	Tall Rush	
<i>Poa labillardierei</i>	Common Tussock-grass	drier areas



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## Modified Ecological Vegetation Class (EVC) Planting Lists and Density Recommendations for Giant Gippsland Earthworm (GGE) Habitat

### Recommended Modified Planting Densities within GGE Habitat for EVCs: Swampy Woodland / Swampy Riparian Woodland

ZONES	LIFEFORM	MODIFIED GGE EVC BENCHMARK - PLANTS / HA	APPROXIMATE SPACING (m)	NOTES
<b>Zone 1</b>				
1	Trees	0	n/a	<b>No planting</b>
1	Understorey trees / shrubs	0	n/a	<b>No planting</b>
1	Medium shrubs / small shrubs	0	n/a	<b>No planting</b>
1	Graminoids	400	5	<p>On occasion, you may choose to do limited planting in Zone 1 for the following reasons:</p> <ul style="list-style-type: none"> <li>- To prevent soil erosion</li> <li>- If you are worried about weed issues in the future or the need to maintain the site</li> <li>- If the colonies are close together (less than 30 m apart)</li> </ul> <p>If planting in Zone 1, only plant from the graminoid lifeform found (tussock grasses/sedges/rushes).</p>
<b>Zone 2</b>				
2	Trees	0	n/a	<b>No planting</b>
2	Understorey trees / large shrubs	40	15	No planting of <i>Acacia dealbata</i> and <i>Acacia melanoxylon</i> in Zone 2.
2	Medium shrubs / small shrubs	200	7	Plant taller, medium-sized shrubs such as <i>Prostanthera lasianthos</i> and <i>Acacia verticillata</i> towards outer edge of Zone 2.
2	Graminoids	1500	2.5	
<b>Zone 3</b>				
<b>No modified planting</b>				
3	Trees	200	7	
3	Understorey trees / large shrubs	200	7	
3	Medium shrubs / small shrubs	800	3.5	
3	Graminoids	2000	2	

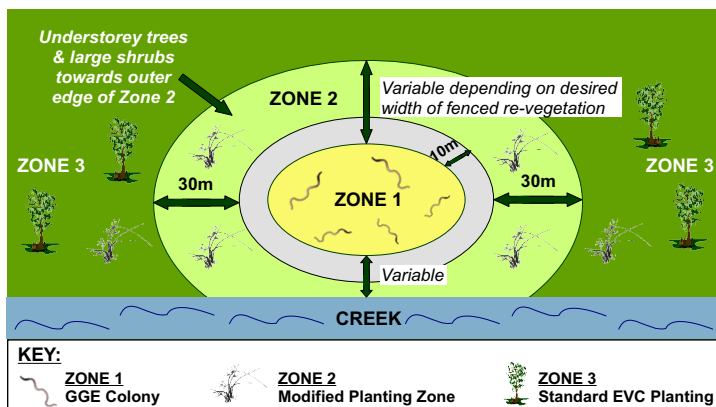
# Giant Gippsland Earthworm



## Modified Ecological Vegetation Class (EVC) Planting Lists and Density Recommendations for Giant Gippsland Earthworm (GGE) Habitat

### Recommended Modified Planting Densities within GGE Habitat for EVCs: Swampy Woodland / Swampy Riparian Woodland

- Zone 1: GGE Habitat plus 10 m buffer
- Zone 2: From Zone 1 boundary out 30 m
- Zone 3: From Zone 2 boundary to outer edge of revegetation site



# Giant Gippsland Earthworm



## Modified Ecological Vegetation Class (EVC) Planting Lists and Density Recommendations for Giant Gippsland Earthworm (GGE) Habitat

### Riparian Forest

Riparian Forest is a tall forest of river banks and alluvial terraces of larger streams. It is dominated by tall eucalypts such as Manna Gum (*Eucalyptus viminalis subsp. viminalis*), Strzelecki Gum (*Eucalyptus strzeleckii*) and Mountain Ash (*Eucalyptus regnans*), but also has a secondary tree layer of variable density including Silver Wattle (*Acacia dealbata*) and Blackwood (*Acacia melanoxylon*) with scattered dense patches of shrubs as well as ferns, grasses and herbs.

The Giant Gippsland Earthworm colonies are found on the periphery of Riparian Forest in areas containing moist to wet soils but not inundated by floods.

A number of intact and semi-intact Riparian Forest sites occur throughout the Strzeleckis, one such example being at Bass River, Loch where major revegetation works are occurring at present.



**Mature Riparian Forest, Central Highlands**



**Mountain Ash growing on Bass River terrace within Riparian Forest, Loch. Weeds sprayed and site ready for revegetation.**

# Giant Gippsland Earthworm



## Modified Ecological Vegetation Class (EVC) Planting Lists and Density Recommendations for Giant Gippsland Earthworm (GGE) Habitat

### Revegetation Species List for EVC: Riparian Forest

SCIENTIFIC NAME	COMMON NAME	NOTES
<b>Overstorey Trees</b>		
<i>Eucalyptus globulus</i>	Blue Gum	
<i>Eucalyptus regnans</i>	Mountain Ash	
<i>Eucalyptus obliqua</i>	Messmate	
<i>Eucalyptus strzeleckii</i>	Strzelecki Gum	
<i>Eucalyptus viminalis subsp. viminalis</i>	Manna Gum	
<b>Understorey trees / large shrubs</b>		
<i>Acacia dealbata</i>	Silver Wattle	
<i>Acacia melanoxylon</i>	Blackwood	
<i>Hedycarya angustifolia</i>	Djelwuck	
<i>Pomaderris aspera</i>	Hazel Pomaderris	
<b>Medium / small shrubs</b>		
<i>Bursaria spinosa</i>	Kurwan	
<i>Cassinia aculeata</i>	Common Cassinia	
<i>Gynatrix pulchella</i>	Hemp Bush	
<i>Melicytus dentatus</i>	Tree Violet	
<i>Olearia lirata</i>	Snowy Daisy-bush	
<i>Ozothamnus ferrugineus</i>	Tree Everlasting	
<i>Polyscias sambucifolia</i>	Elderberry Panax	
<i>Prostanthera lasianthos</i>	Victorian Christmas-bush	
<b>Graminoids</b>		
<i>Carex appressa</i>	Tall Sedge	wetter areas
<i>Poa labillardierei</i>	Common Tussock-grass	
<i>Poa tenera</i>	Slender Tussock-grass	
<b>Scramblers/climbers</b>		
<i>Rubus parvifolius</i>	Small-leaf Bramble	

# Giant Gippsland Earthworm



## Modified Ecological Vegetation Class (EVC) Planting Lists and Density Recommendations for Giant Gippsland Earthworm (GGE) Habitat

### Revegetation Species List for EVC: Riparian Forest

SCIENTIFIC NAME	COMMON NAME	NOTES
<b>Herbs (optional)</b>		
<i>Acaena novae-zelandiae</i>	Bidgee-widgee	
<i>Geranium potentilloides</i>	Soft Crane's-bill	
<i>Hackelia latifolia</i>	Forest Hound's-tongue	
<i>Hydrocyle hirta</i>	Hairy Pennywort	
<i>Stellaria flaccida</i>	Forest Starwort	

# Giant Gippsland Earthworm



## Modified Ecological Vegetation Class (EVC) Planting Lists and Density Recommendations for Giant Gippsland Earthworm (GGE) Habitat

### Recommended Modified Planting Densities within GGE Habitat for EVC: Riparian Forest

ZONES	LIFEFORM	MODIFIED GGE EVC BENCHMARK - PLANTS / HA	APPROXIMATE SPACING (m)	NOTES
<b>Zone 1</b>				
1	Trees	0	n/a	<b>No planting</b>
1	Understorey trees / shrubs	0	n/a	<b>No planting</b>
1	Medium shrubs / small shrubs	0	n/a	<b>No planting</b>
1	Graminoids	600	4	<p>On occasion, you may choose to do limited planting in Zone 1 for the following reasons:</p> <ul style="list-style-type: none"> <li>- To prevent soil erosion</li> <li>- If you are worried about weed issues in the future or the need to maintain the site</li> <li>- If the colonies are close together (less than 30 m apart)</li> </ul> <p>If planting in Zone 1, only plant from the graminoid lifeform found (tussock grasses/sedges/rushes).</p>
<b>Zone 2</b>				
2	Trees	0		<b>No planting</b>
2	Understorey trees / large shrubs	100	10	No planting of <i>Acacia dealbata</i> and <i>Acacia melanoxylon</i> in Zone 2.
2	Medium shrubs / small shrubs	600	4	Plant taller, medium-sized shrubs such as <i>Bursaria spinosa</i> and <i>Polyscias sambucifolia</i> towards outer edge of Zone 2.
2	Graminoids	1000	3	Plant <i>Carex</i> and <i>Juncus</i> species only on terraces and break of slope.
<b>Zone 3</b>				
3	Trees	200	7	
3	Understorey trees / large shrubs	150	8	
3	Medium shrubs / small shrubs	800	4	
3	Graminoids	1000	3	Plant <i>Carex</i> and <i>Juncus</i> species only on terraces and break of slope.

# Giant Gippsland Earthworm

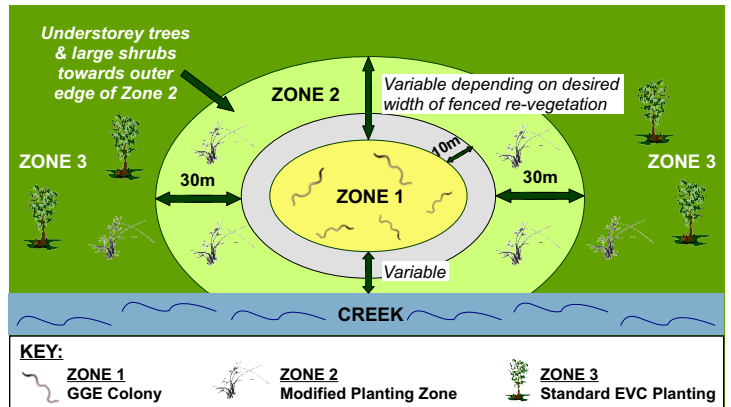


## Modified Ecological Vegetation Class (EVC) Planting Lists and Density Recommendations for Giant Gippsland Earthworm (GGE) Habitat

### Recommended Modified Planting Densities within GGE Habitat for EVC: Riparian Forest

- Zone 1:** GGE Habitat plus 10 m buffer
- Zone 2:** From Zone 1 boundary out 30 m
- Zone 3:** From Zone 2 boundary to outer edge of revegetation site

**NB:** Riparian Forest may rarely extend beyond the 30 m buffer zone of Zone 2. If this is the case, then please refer to the species list for the adjacent EVCs, Damp Forest.



Australian Government

The 'Enhanced Knowledge and Protection of the Giant Gippsland Earthworm' project received grant funding from the Australian Government.